REMARKS/ARGUMENTS

The Examiner has rejected claims 1-53 under 35 U.S.C. §§ 102(b), 103(a). Applicant asserts that the following arguments will overcome the rejections of claims 1-53 and requests reconsideration and allowance of these claims.

I. REJECTIONS UNDER 35 U.S.C. § 102

The Examiner has rejected claims 1-3, 10, and 11 under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,382,986 to Black et al. The Examiner's rejection, however, is apparently built upon the faulty assumption that a liquid crystal cell is "a retarder stack." While liquid crystals can be used to impart phase retardance, a retarder stack, as disclosed and claimed in the present application, is physically distinct and performs a different function from a liquid crystal cell. As described and claimed in the present application, retarder stacks are formed of several layers. The principles of retarder stacks are described as follows in a 1999 SID paper lead-authored by Gary Sharp, the Applicant of the present application:

> Retarder stack theory was originally developed to produce high-resolution crystal-based optical filters using radio frequency (RF) design principles. It was observed that N identical linear retarders generate (N+1) colinearly propagating waves from a polarized input. As such, retarder stacks between neutral polarizers are finite impulse response (FIR) filters, and can be designed using standard signal processing methods. The amplitude of each time-impulse is determined by the orientations of the retarders (and the analyzing polarizer) relative to the input polarization. Algorithms are used to extract the retarder and analyzing polarizer orientations necessary to satisfy a prescribed impulse response.
>
> As an FIR structure, a retarder stack obeys basic linear systems theory.. . . As in any FIR design, there is a fundamental tradeoff between number of retarders and performance in the frequency (or wavelength) domain.

G. D. Sharp & J.R. Birge, *Retarder Stack Technology for Color Manipulation*, 30 SID SYMPOSIUM 1072, at 1 (Apr. 1999)(footnotes omitted).

Unlike retarder stacks, liquid crystals do not contain layers and do not perform FIR filtering based upon stacks of distinct retarder layers.

Accordingly, the present claims are patentably distinct as written, and the rejection of these claims under Section 102 must be withdrawn. Specifically, claim 1 recites at least the following element: "a retarder stack between the input polarizing element and the output polarizing element." Black, in contrast, discloses a liquid crystal cell between two polarizing plates (col. 4, lns. 36-54). A liquid crystal cell contains transparent molecular solutions, which can be mechanically aligned and electrically rearranged to change the polarization direction of incident light (col. 4, lns. 55-60). A liquid crystal cell further contains thin transparent matrices made of electrically conductive materials thereby forming microscopic pixels/cells (col. 4, lns. 48-54, 61-64). The pixels/cells can change the direction of polarization of incident light depending on applied voltages. For example, Black discloses turning light by 90 degrees with respect to an input polarization when no voltage is applied (col. 5, lns. 18-23). In other words, an s-polarized incident light entering a liquid crystal cell may be changed to p-polarization (90 degrees with respect to s-polarization) upon exiting the liquid crystal cell when no voltage is applied. Conversely, in an embodiment described in Black, when a voltage is applied and it exceeds a threshold value, light passes through without changing polarization (col. 5, lns. 24-30). Accordingly, the liquid crystal cell of Black, in effect, changes the direction of polarization of an incident light depending on an applied voltage. As set forth above, liquid crystal cells are not stacks of multiple retarder films that can shift or retard certain components of light. Liquid crystal cells do not perform wavelength-dependent filtering as do stacks of multiple retarder films. Since Black fails to expressly or inherently disclose each element in claim 1, and

specifically because Black does not expressly or inherently disclose a retarder stack or the specific claimed operation of the stack as in claim 1, the Section 102 rejection of claim 1 must fail. In addition, since claims 2-3, 10, and 11 depend from and add further limitations to claim 1, the rejection of these claims is also overcome. Therefore, claims 1-3, 10, and 11 are patentably distinct as written, and the rejection of these claims under Section 102 should accordingly be withdrawn.

II. REJECTIONS UNDER 35 U.S.C. § 103

The Examiner has rejected claims 4-9 and 12-44 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Black et al. in view of U.S. Patent No. 4,826,286 to Thornton Jr., and claims 45-53 further in view of U.S. Patent No. 5,774,202 to Abraham et al. Applicant respectfully disagrees because the combinations of Black et al. with Thornton Jr., and further in view of Abraham et al. fail to teach or suggest all the limitation of the claims. Since these claims are clearly patentable over the cited references, the Applicant respectfully requests that the rejection of these claims under Section 103 be withdrawn.

With regards to claims 4-9 and 12-44, Black et al. discloses a pair of liquid crystal sunglasses having a liquid crystal cell arranged between polarizing plates (abstract). A liquid crystal cell, as previously discussed, is not a retarder stack, and as previously discussed does not operate in the claimed manner. *See* discussion *supra*. With regards to claims 45-53, combinations of Black with Thornton and further in view of Abraham should also fail by the same arguments.

Because the combinations of Black et al. with Thornton Jr., and further in view of Abraham et al. fail to teach or suggest all the limitation of claims 4-9 and 12-53, and because they add further limitations to allowable base claims, these claims are also patentable over the

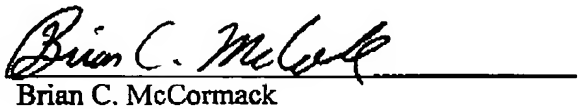
cited references. Therefore, the Applicant respectfully requests that the rejection of these claims under Section 103 should accordingly be withdrawn.

III. CONCLUSION

Applicant respectfully requests reconsideration and allowance of all claims. The Examiner is invited to contact the undersigned Attorney of Record if it would expedite the prosecution of the present Application. Applicant notes that this response is timely filed within the shortened statutory three-month period and therefore no extension fee is required. If it is determined that additional fees are due, or if an overcharge has occurred, please charge or credit Deposit Account No. 13-0480 referencing the Attorney Docket number specified herein.

Respectfully submitted,

Date: 4-15-2005



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